

NHDES

Beach Program

Public Notification and Risk Communication Plan



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Public Notification and Risk Communication Plan

Notification of local government, municipalities, public, and EPA

1.0 Problem Definition/Assessment

The New Hampshire Department of Environmental Services' (NHDES) recognizes the public health threats associated with recreating in waters containing pathogenic organisms. As a result of this threat to public health, NHDES operates a Public Beach Inspection Program (Beach Program) during the swim season (mid-June to Labor Day). Beach inspectors monitor the water quality of all public beaches by collecting bacteria samples and inspecting the toilet facilities.

In accordance with Environmental Protection Agency (EPA) guidelines, New Hampshire uses indicator organisms to predict the presence of pathogenic organisms in surface waters of the state. Pathogenic organisms are those that cause waterborne diseases and result in illnesses to the water user.

NHDES has followed the EPA recommendations published in the *Ambient Water Quality Criteria for Bacteria-1986* that incorporate a bacterial standard for freshwater and coastal waters. The New Hampshire standard for public freshwater beaches is 88 counts of *E. coli* /100 mL in a single sample or a geometric mean of 47 counts/100 mL of at least 3 samples over a 60 day-period. The state standard at public coastal beaches is 104 counts of Enterococci /100 mL in a single sample or a geometric mean of 35 counts/100 mL of at least 3 samples over a 60-day period.

The program goals include increased public awareness and a higher level of public protection against pathogenic organisms. This can be achieved by communicating public health threats in a quick, effective manner.

1.1 Audience

New Hampshire coastal beaches are popular sites for out-of-town visitors. The majority of our coastal beaches attract tourists from the New England states, other areas of the country, and even from other countries. Some coastal beaches, while supporting use by out-of-town visitors, are great congregational areas for the towns' residents. New Hampshire's coastal beaches are also popular gathering places for families, local college students, field trips, festivals, and much more.

The state's freshwater beaches attract a variety of beach users as well. Some beaches are open only to town residents while others are used by residents, tourists, local schools, and summer camps.

The popularity of New Hampshire's beaches makes the protection of public health a main goal of the Beach Program. When sample analyses reveal an exceedance of water quality standards, public health may be compromised. A quick response to the public is necessary to warn swimmers of the potential health risks.

The first step in developing an effective notification plan is to determine the target audience.

Therefore, the Beach Program will need to identify the most appropriate means of communicating with the variety of beach users when samples exceed water quality standards at their respective beaches. Public notification to the target audience and the most appropriate means of communication are key elements to protect public health.

2.0 Types of Notification

The Beach Program has established a process that details the factors used to determine a beach advisory (Beach Program Standard Operating Procedure for Beach Advisories Appendix B). In addition to a DES beach advisory, local governments may issue beach closures. A beach closure may restrict all activities at that particular beach.

2.1 Beach Advisories

An advisory is a recommendation to the public to avoid water contact activities in areas where bacteria results exceed the state's water quality standards or when a potential toxic cyanobacteria scum is present. A beach advisory allows the public to recreate at the beach, but advises them to stay out of the water. Currently the Beach Program displays two types of advisories:

1. A *bacterial water quality advisory* notifies the public that bacteria levels exceeded state water quality standards during routine monitoring/inspections of beach areas.
2. A *cyanobacteria water quality advisory* notifies the public of the potential presence of a toxic cyanobacterial scum in the bathing area.

3.0 When to Notify

A beach advisory will be issued by the Beach Program when:

1. Enterococci levels exceed the state standard of 104 counts per 100 milliliters (mL) of water in at least one sample, or when enterococci levels exceed the geometric mean of 35 counts per 100 mL based on at least 3 samples obtained over a 60-day period. (NHDES collects two to three samples per beach per inspection depending on beach length.) Immediate re-sampling will occur for all situations listed above.
2. *E. coli* levels exceed the state standard of 88 counts per 100 mL of water in at least one sample, or when *E. coli* levels exceed the geometric mean of 47 counts per 100 mL based on at least 3 samples obtained over a 60-day period. Immediate re-sampling will occur for all situations stated above.
3. A dominant, potential toxin-producing cyanobacterial scum is present at the bathing area. Dominance is considered 50% or more of the cell count. A cell count is equivalent to a colony of cyanobacterial (most are colonial). Re-sampling will occur until dominance of the alga is determined to be less than 50% of the cell count.

4.0 How to Notify

The Program Manager, Coordinator, or Beach Inspector, will be responsible for issuing beach advisories. The Beach Program will also utilize other methods of public notification, such as a press release to a local newspaper or radio station, a posting on the Beach Program website, or a message on the Beach Program hotline.

Advisories are immediately issued upon published results from NHDES Laboratory Services. Once standards are exceeded, Beach Program personnel will contact the local health official, beach manager, or town administrator. Advisories are posted by the health official, beach manager, or Beach Program personnel. Posting will occur at all access points to the beach. Town health officials, beach managers, or Beach Program staff will notify all lifeguards of the advisory.

4.1 Signs

The Beach Program has developed official signs that are required to be posted during a beach advisory. A second sign is also available to post at coastal beaches notifying the public that the beach is open for public swimming. A third sign is available for freshwater beaches warning the public that a potential cyanobacteria scum is present. A fourth sign is available to post at beaches or access points notifying the public that the area is not monitored on a routine basis by the Beach Program.

Reproductions of these signs are located in Appendix A.

4.2 Press Releases

The Beach Program will create a template for press releases relating to beach advisories. These press releases will be issued immediately following notification of the appropriate beach contact. The information in the press release will include the reason for the advisory, the area affected, and the anticipated duration of the advisory. Contact information for the local beach representative and the DES Beach Program will also be included.

The press releases will be sent to local newspapers and radio stations. Press releases that are issued by DES are posted on the DES website at <http://www.des.state.nh.us/press.htm>.

4.3 Web Site

A DES beach advisory webpage will be available for the 2003 season. The page will include information about the reason for the advisory, the area affected, and the anticipated advisory duration. Beach Program contact information will also be available on the webpage.

The Beach Program participates in the Earth 911 beach quality website: <http://newhamphshire.earth911.org/waterquality/index.html>. The Beach Program provides information and data to the website on a regular basis during the summer months. Advisory information is posted on the website as soon as it is received. Note: Earth 911 is currently used only for coastal beaches.

4.4 Technical Reports

The Beach Program produces an annual report listing all the beach advisories issued during the year. The report includes the beach name, number of advisories issued, duration of the advisories, and whether the advisories were due to excessive bacteria or the presence of cyanobacteria.

5.0 Notification Removal

Beach Program personnel will resample the beach until the bacteria concentration falls within the state's water quality standards. Once samples reflect data within the state standard for public beaches the advisory is removed either by the state or local officials.

If the advisory was issued due to the presence of cyanobacteria, the bathing area will be resampled until the cyanobacteria species is less than 50% of the total cell count.

Public notification of advisory "removal" will be made through contact with the beach manager or local town official. The Beach Program and Earth 911 websites will be updated to indicate the advisory has been removed.

6.0 Evaluation of Notification Process

Beach Program personnel will conduct evaluations to determine whether the notification process is effective. The Beach Program may conduct surveys with the public to determine which source of information (i.e., signs, hotline, press releases, website) was most successful in public notification.

Beach Program personnel, along with local beach managers and town officials, will assess the effectiveness of the communication methods used in the notification process.

The results of the surveys and interviews will be compiled and used to assess the effectiveness of the notification process.

7.0 Notification Report Submission and Delegation

The local government will be authorized by DES to post and remove signs at beaches during and after an advisory. If the local government determines that a beach closure is most appropriate, the town official or beach manager will be responsible for reporting this decision to the Beach Program Coordinator.

The NHDES Beach Program will be responsible for annual reporting of data, including the notification data, to the Environmental Protection Agency.

APPENDIX A

Beach Program Signs

NOTICE

THIS BEACH AREA MAY NOT
BE SUITABLE FOR SWIMMING
DUE TO
HIGH LEVELS OF BACTERIA

Per Commissioner
NH Department of Environmental Services

Please:

- R Do not drink the water or let children drink the water!
- R Do not wade or swim in the water!

Exposure to pathogenic organisms may cause various symptoms,
including nausea, vomiting, diarrhea, fever, general malaise
or skin rashes.

For more information contact:

NHDES
Biology Section
PO Box 95, 6 Hazen Drive
Concord, NH 03302-0095
603-271-3503



NOTICE

THIS BEACH AREA MAY NOT
BE SUITABLE FOR SWIMMING
DUE TO HIGH LEVELS OF
**POTENTIALLY TOXIC
BLUE-GREEN ALGAE**

Per Commissioner
NH Department of Environmental Services

Please:

- Do not wade or swim in water containing visible blue-green or greenish scums!
- Do not drink the water or let children drink the water!
- Do not let pets or livestock into the water!

Exposure to blue-green algal scums may cause various symptoms, including nausea, vomiting, diarrhea, mild fever and general malaise. Anyone who comes in contact with an algal scum should rinse off with freshwater.

For more information contact:
NHDES
Biology Section
PO Box 95, 6 Hazen Drive
Concord, NH 03302-0095
603-271-3503 or 603-271-3414



OPEN

**THIS BEACH IS OPEN FOR
SWIMMING AND RECREATION
AND
MEETS STATE STANDARDS FOR
ACCEPTABLE BACTERIA LEVELS**

**IF INTERESTED IN LEARNING MORE ABOUT WATER
QUALITY AT PUBLIC BEACHES PLEASE CONTACT:**

NHDES
PO BOX 95, 6 HAZEN DR
CONCORD, NH 03302-0095
603-271-8803 or 603-271-3414
email: swimmn@des.state.nh.us
swimmn@des.state.nh.us
web address: www.des.state.nh.us/
www.epa.gov/waterscience/beaches/data.html

**IF INTERESTED IN LEARNING OF CURRENT BEACH
ADVISORIES AND CONDITIONS CONTACT NHDES OR:**

EARTH 911 @
www.newhampshire.earth911.org/waterquality/index.asp



NOT MONITORED

THIS BEACH IS NOT MONITORED ON
A ROUTINE BASIS

INFORMATION IS UNAVAILABLE TO ASSESS
CURRENT BACTERIA LEVELS

FOR ADDITIONAL INFORMATION ON WATER
QUALITY AT PUBLIC BEACHES CONTACT:

NHDES

PO BOX 95, HAZEN DR
CONCORD, NH 03302-0095
603-271-8803 or 603-271-3414

email: ssumner@des.state.nh.us

jconnor@des.state.nh.us

web address: www.des.state.nh.us/
www.epa.gov/waterscience/beaches/data.html

CURRENT BEACH ADVISORIES AND CONDITIONS
CAN BE OBTAINED FROM NHDES OR:

EARTH 911@

www.newhampshire.earth911.org/waterquality/index.asp



APPENDIX B

Beach Program Standard Operating Procedure for Beach Advisories

STANDARD OPERATING PROCEDURE
FOR BEACH ADVISORIES

Prepared by: _____ **Date:** _____
Program Coordinator

Reviewed by: _____ **Date:** _____
Program Manager

Approved by: _____ **Date:** _____
Quality Assurance Officer

N.H. DEPARTMENT OF ENVIRONMENTAL SERVICES
BEACH PROGRAM

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PROCEDURES

1.0 Purpose and Applicability

- 1.1 The purpose of this standard operating procedure is to develop consistency in the public beach advisory notification and posting process. The issuance and posting of a beach advisory requires a coordinated effort between the state, towns, and local beach managers. Through this effort the Beach Program will enhance public notification to better protect the public from contracting a water-borne disease.
- 1.2 Public beaches where water quality standards for primary recreation are exceeded require public notification that the water may not be suitable for recreation. The procedure to notify the public is discussed below.

2.0 Definitions

- 2.1 The following are definitions applicable to the public beach advisory notification and posting process:
 - Issue: The act of notifying the proper beach contact of a water quality violation that requires an advisory.
 - Advisory: A report (sign) that provides information about beach water quality.
 - Posting: The act of attaching the advisory to an object at beach access area.
 - Primary Contact: The main contact person for a beach (could also be the advisory contact).
 - Advisory Contact: The person notified of a beach advisory (could also be the primary contact).
 - Secondary Contact: The person notified of a beach advisory if the primary or advisory contacts are unavailable.

3.0 Personnel Qualifications/Responsibilities

- 3.1 The following DES personnel may be responsible for issuing a beach advisory:
 - DES Limnology Center Director
 - DES Beach Program Coordinator

- DES Freshwater Beach Inspector

3.2 The following personnel may be responsible for posting a beach advisory:

- DES Beach Program Coordinator
- DES Beach Program Assistant
- DES Freshwater Beach Inspector
- Town Health Officer
- Beach Owner/Manager
- Advisory Contact (if different from health officer or beach owner/manager) (This information was provided to the Beach Program from towns and/or beach managers)

3.3 The following personnel may be responsible for taking bacteria samples:

- DES Beach Program Coordinator
- DES Beach Program Assistant
- DES Freshwater Beach Inspector
- Beach Program Intern
- Town Health Officer
- Beach Owner/Manager
- Advisory Contact (if different from health officer or beach owner/manager) (This information was provided to the Beach Program from towns and/or beach managers)

4.0 Procedure

4.1 Bacteria results for public beach water samples are obtained from the DES Laboratory Services Unit on a daily basis. The results may be received in report, electronic, or verbal format.

4.2 The following describes the issuance, notification, and posting procedures for bacteria advisories.

1. Review report results for exceedances of state water quality standards (88cts/100mL *E. coli* and 104cts/100mL Enterococci).

Exceedances may also be communicated by laboratory personnel prior to report review.

2. Notify the Limnology Center Director, Beach Program Coordinator, or Freshwater Beach Inspector of any exceedances and the associated public beach.
 3. Access the Beach Contacts Excel Spreadsheet (soon to be in the water quality database). Find the primary and advisory contact associated with the beach.
 4. Immediately contact both parties (if different) by phone and/or email. If you cannot get in touch with the primary or advisory contact, call the secondary contact. If no contact is available, leave messages and keep trying until you reach someone.
 5. Notify the contact(s) of the bacteria exceedance(s) at the public beach. Verbally communicate the sample results and inform the contact(s) that hard copies of the results are being mailed or can be faxed.
 6. Inform the contact(s) that a bacteria advisory is being issued for the public beach. Briefly describe the content and means of the bacteria advisory.
 7. If the contact(s) has a DES Beach Program Bacteria Advisory sign, instruct the individual to post the sign at visible access points to the beach area or lifeguard stands. If the contact(s) does not have a sign, fax the sign and instruct them to copy the sign on a bright yellow piece of paper. Or, bring the sign to the beach and post.
 8. If the primary, advisory, or secondary contacts cannot be reached to issue the advisory on that day, Beach Program personnel must go to the beach to post the advisory.
 9. Inform, via e-mail, the DES Limnology Center Director when a beach has been posted. The Limnology Center Director will then send an e-mail to the DES Watershed Management Bureau Administrator, Water Division Director, and DES Commissioner indicating that the beach has been posted.
- 4.3 Coastal beach advisories must be updated on the Earth 911 website. Refer to [.\.\Website\Earth 911\Data Entry Instructions.doc](#) for instructions on how to update the website.

- 4.4 Coastal and freshwater beach advisories must be updated on the DES Beach Program web page. Notify Joanne Keough with advisory information to update the website.
- 4.5 Along with the issuance and posting of the advisory immediate re-sampling of the beach must occur within 24 hours. Sampling must follow the Beach Program's Standard Operating Procedures (SOPs) for Bacteria Sampling.
- 4.6 The following describes the re-sample and advisory removal procedure for bacteria advisories:
 1. Re-sampling should occur immediately (within 24 hours) after notification of bacteria standard exceedances.
 2. If Program personnel are available to re-sample the beach they should do so.
 3. If Program personnel are unavailable to re-sample the beach, discuss with the contact(s) if they can re-sample and transport the samples to the DES Laboratory.
 4. Provide the contact(s) with the Beach Program's SOP for Bacteria Sampling (email) or verbally communicate the sampling protocol if they are unaware of the procedure.
 5. After the re-samples are analyzed by the lab (within 24-48 hours), check sample results for continued exceedance of standards.
 6. If sample results continue to exceed state standards, notify the beach contact(s) that the beach advisory needs to remain posted.
 7. Re-sample the beach immediately (Follow procedure above).
 8. If sample results are below state standards, notify the beach contact(s) that the beach advisory may be removed. If the beach contacts are unavailable the beach advisory may be removed by Program personnel.
- 4.7 Coastal beach advisory removal must be updated on the Earth 911 website. Follow instructions referenced above.
- 4.8 Coastal and freshwater beach advisory removal must be updated on the DES Beach Program web page. The DES Beach Program Coordinator or the DES Beach Program Assistant will be responsible for maintaining the Beach Advisory web page.

5.0 Criteria

- 5.1 According to RSA 485 A:8, the State standard at freshwater beaches for *E. coli* in one sample is no more than 88 counts/100 mL of water, or no more than a geometric mean of 47 counts/100 mL of water in 3 samples over a sixty day period. The State standard at coastal beaches for Enterococci in one sample is 104 counts/100 mL of water, or no more than a geometric mean of 35 counts/100 mL of water in 3 samples over a sixty day period.
- 5.2 DES posts beach advisories when one sample (there are two to three samples collected per beach) exceeds the State standards by greater than 70 counts or when two samples (collected on the same day) exceed the standards.

6.0 Data and Records Management

- 6.1 All data generated from the Laboratory Services unit is stored as hard copies in beach specific folders, and electronically in the Laboratory's database and the Watershed Management Bureau's Water Quality Database.
- 6.2 Records of advisory postings are stored as hard copies in the Beach Programs files, and electronically in the Beach Program's files, the Watershed Management Bureau's Water Quality Database.

7.0 Quality Assurance and Quality Control

- 7.1 Quality assurance and quality control measures for the analysis of bacteria samples follow the steps outlined in the Laboratory Services Unit's Quality Systems Manual. The procedures followed are Enterococci Standard Method 9230C and *E. coli* Standard Method 9213D.
- 7.2 All data generated from the Laboratory Services Unit is validated according to their Standard Operating Procedure for Data Validation and Verification.

8.0 References

State of New Hampshire, Revised Statutes Annotated, *Title L Water Management and Protection, Chapter 485-A Water Pollution and Waste Disposal*, 1998.

NHDES Beach Program, *Earth 911 Data Entry Instructions*, 2003.

NHDES Beach Program Standard Operating Procedures, *Bacteria Sampling*, 2003.

NHDES Laboratory Services Unit Standard Operating Procedure, *Data Validation and Verification*, 2003.

NHDES Laboratory Services Unit, *Quality Systems Manual*, 2003.